Abstract

A radiation detackifiable adhesive composition comprising a (meth)acrylate copolymer including from 85 wt. % to 97.5 wt. % of a (meth)acrylate ester and from 2.5 wt. % to 15 wt. % of a copolymerizable carboxylate monomer and a multi-functional urethane acrylate oligomer combined with the (meth)acrylate copolymer to provide from 25 parts to 40 parts of the oligomer per 100 parts of the copolymer. The adhesive composition becomes progressively detackified during exposure to ultraviolet radiation. Properties of adhesive compositions may be maintained at elevated temperatures, from about 115°C to about 155°C, when they include a thermally stable free radical initiator to overcome premature adhesive detackification.

The present invention further provides a clear adhesive coated sheet for supporting a silicon wafer during manufacture of semiconductor microchips. The coated sheet comprises a transparent film substrate coated with a radiation detackifiable adhesive composition.